

Алматы (7273)495-231  
 Ангaрск (3955)60-70-56  
 Архангельск (8182)63-90-72  
 Астрахань (8512)99-46-04  
 Барнаул (3852)73-04-60  
 Белгород (4722)40-23-64  
 Благовещенск (4162)22-76-07  
 Брянск (4832)59-03-52  
 Владивосток (423)249-28-31  
 Владикавказ (8672)28-90-48  
 Владимир (4922)49-43-18  
 Волгоград (844)278-03-48  
 Вологда (8172)26-41-59  
 Воронеж (473)204-51-73  
 Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
 Ижевск (3412)26-03-58  
 Иркутск (395)279-98-46  
 Казань (843)206-01-48  
 Калининград (4012)72-03-81  
 Калуга (4842)92-23-67  
 Кемерово (3842)65-04-62  
 Киров (8332)68-02-04  
 Коломна (4966)23-41-49  
 Кострома (4942)77-07-48  
 Краснодар (861)203-40-90  
 Красноярск (391)204-63-61  
 Курск (4712)77-13-04  
 Кургaн (3522)50-90-47  
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
 Москва (495)268-04-70  
 Мурманск (8152)59-64-93  
 Набережные Челны (8552)20-53-41  
 Нижний Новгород (831)429-08-12  
 Новокузнецк (3843)20-46-81  
 Ноябрьск (3496)41-32-12  
 Новосибирск (383)227-86-73  
 Омск (3812)21-46-40  
 Орел (4862)44-53-42  
 Оренбург (3532)37-68-04  
 Пенза (8412)22-31-16  
 Петрозаводск (8142)55-98-37  
 Псков (8112)59-10-37  
 Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
 Рязань (4912)46-61-64  
 Самара (846)206-03-16  
 Санкт-Петербург (812)309-46-40  
 Саратов (845)249-38-78  
 Севастополь (8692)22-31-93  
 Саранск (8342)22-96-24  
 Симферополь (3652)67-13-56  
 Смоленск (4812)29-41-54  
 Сочи (862)225-72-31  
 Ставрополь (8652)20-65-13  
 Сургут (3462)77-98-35  
 Сыктывкар (8212)25-95-17  
 Тамбов (4752)50-40-97  
 Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
 Томск (3822)98-41-53  
 Тула (4872)33-79-87  
 Тюмень (3452)66-21-18  
 Ульяновск (8422)24-23-59  
 Улан-Удэ (3012)59-97-51  
 Уфа (347)229-48-12  
 Хабаровск (4212)92-98-04  
 Чебоксары (8352)28-53-07  
 Челябинск (351)202-03-61  
 Череповец (8202)49-02-64  
 Чита (3022)38-34-83  
 Якутск (4112)23-90-97  
 Ярославль (4852)69-52-93

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Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

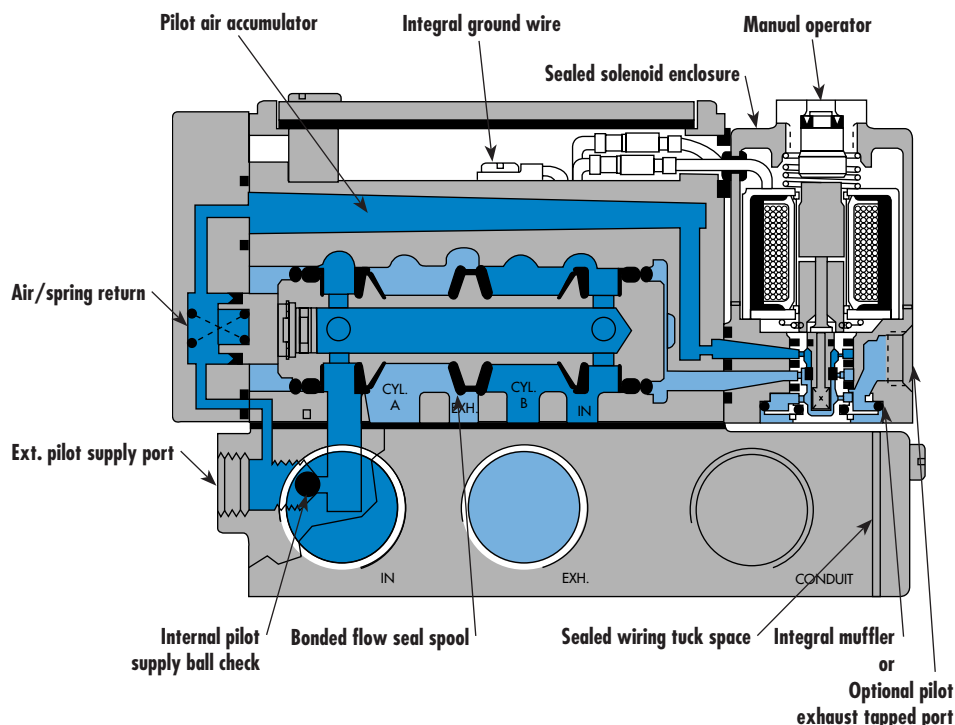
<https://mac.nt-rt.ru> || [mcp@nt-rt.ru](mailto:mcp@nt-rt.ru)

### Individual mounting

| sub-base<br>non "plug-in" | sub-base<br>"plug-in" |
|---------------------------|-----------------------|
|                           |                       |

### Manifold mounting

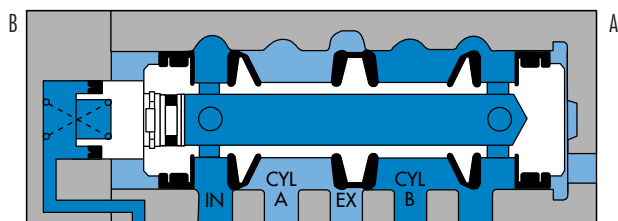
| sub-base<br>non "plug-in" | sub-base<br>"plug-in" |
|---------------------------|-----------------------|
|                           |                       |



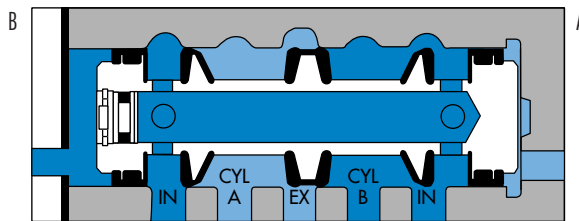
## SERIES FEATURES

- The patented MACSOLENOID® with its non-burn out feature on AC service.
- A large checked accumulator for consistent shifting on single and double solenoid models.
- A plug-in design that provides for internal or external pilot with or without lights and all electrical and air plumbing in the base — the valve portion is the same.
- Non-lubricated or lubricated service.
- Optional low wattage DC solenoids down to 1 watt.
- Optional indicator lights, and various types of manual operators.
- Non plug-in or external plug-in models are available.

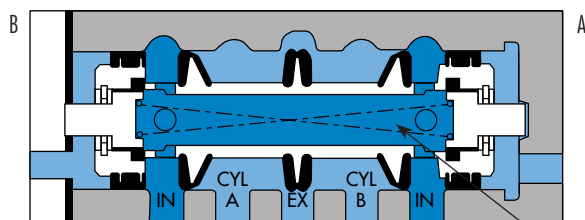
## SPOOL CONFIGURATIONS



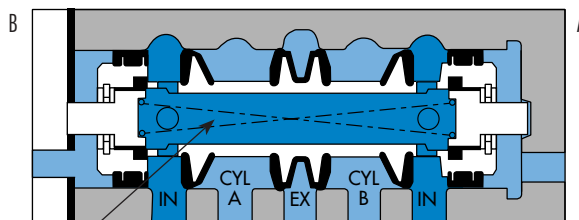
2 POS. SINGLE OPERATOR SPRING RETURN  
B ACTUATED SHOWN



2 POS. DOUBLE OPERATOR  
B ACTUATED SHOWN



3 POS. OPEN CENTER  
CENTER POSITION SHOWN



3 POS. CLOSED CENTER  
CENTER POSITION SHOWN

AIR/SPRING  
CENTERING

## VALVE CONFIGURATIONS AVAILABLE

The versatile 6300 Series provides high flow, extremely fast response, and long life in a compact package and is available in the following configurations:

- 2-Pos., single or double operators (solenoid or remote air).
- 3-Pos., double operator-Closed Center, Open Center or Pressure Center (solenoid or remote air).
- Single pressure.
- Dual pressure on manifolds with sandwich regulators.
- Individual base or add-a-unit manifold base.
- Internal pilot or for Vacuum to 25 PSI main valve pressures, external pilot.
- Manual and mechanical operators available.
- All models available with sandwich regulators (Except remote air pilot).

## REMOTE AIR PILOT OPERATED VALVES

These remote air versions feature:

- A large checked accumulator for air/spring return on single remote air models.
- Non-lubricated or lubricated service.
- All piping connections, including the remote air pilot supply, in the base.

## REMOTE AIR PILOT, PILOT OPERATED VALVES

These special air versions have the same features as the remote air pilot operated models, but additionally feature:

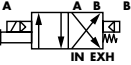
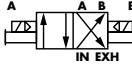
- A manual operator and indicator.
  - Ability to use a pilot signal pressure different from the main valve pressure.
- Pilot signal can be from 20 to 150 PSIG, regardless of main valve pressure.

| Function         | Port size                 | Flow [Max]               | Individual mounting       | Series |
|------------------|---------------------------|--------------------------|---------------------------|--------|
| <b>4/2 - 4/3</b> | <b>1/4" - 3/8" - 1/2"</b> | <b>3.0 C<sub>v</sub></b> | sub-base<br>non "plug-in" |        |

## OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Short stroke with high flow.
3. High shifting forces.
4. Checked accumulator guarantees maximum pilot pressure.
5. Powerful return force thanks to the combination of mechanical and air springs.
6. Bonded spool with minimum friction, shifting in a glass-like finished bore.
7. Wiping effect eliminates sticking.
8. Pilot valve with balanced poppet, high flow, short and consistent response times.

## HOW TO ORDER

| Port size              | Pilot air | 4/2<br>Single operator                                                             | 4/2<br>Double operator                                                             | 4/3<br>Closed center                                                                | 4/3<br>Open center                                                                   |
|------------------------|-----------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                        |           |  |  |  |  |
| <b>Valve less base</b> |           | 6312D-000-PM- <b>XXYZZ</b>                                                         | 6322D-000-PM- <b>XXYZZ</b>                                                         | 6332D-000-PM- <b>XXYZZ</b>                                                          | 6342D-000-PM- <b>XXYZZ</b>                                                           |
| <b>sub-base</b>        | Internal  | 6312D-131-PM- <b>XXYZZ</b>                                                         | 6322D-131-PM- <b>XXYZZ</b>                                                         | 6332D-131-PM- <b>XXYZZ</b>                                                          | 6342D-131-PM- <b>XXYZZ</b>                                                           |
| <b>1/4" NPTF</b>       | External  | 6312D-141-PM- <b>XXYZZ</b>                                                         | 6322D-141-PM- <b>XXYZZ</b>                                                         | 6332D-141-PM- <b>XXYZZ</b>                                                          | 6342D-141-PM- <b>XXYZZ</b>                                                           |
| <b>sub-base</b>        | Internal  | 6312D-231-PM- <b>XXYZZ</b>                                                         | 6322D-231-PM- <b>XXYZZ</b>                                                         | 6332D-231-PM- <b>XXYZZ</b>                                                          | 6342D-231-PM- <b>XXYZZ</b>                                                           |
| <b>3/8" NPTF</b>       | External  | 6312D-241-PM- <b>XXYZZ</b>                                                         | 6322D-241-PM- <b>XXYZZ</b>                                                         | 6332D-241-PM- <b>XXYZZ</b>                                                          | 6342D-241-PM- <b>XXYZZ</b>                                                           |
| <b>sub-base</b>        | Internal  | 6312D-331-PM- <b>XXYZZ</b>                                                         | 6322D-331-PM- <b>XXYZZ</b>                                                         | 6332D-331-PM- <b>XXYZZ</b>                                                          | 6342D-331-PM- <b>XXYZZ</b>                                                           |
| <b>1/2" NPTF</b>       | External  | 6312D-341-PM- <b>XXYZZ</b>                                                         | 6322D-341-PM- <b>XXYZZ</b>                                                         | 6332D-341-PM- <b>XXYZZ</b>                                                          | 6342D-341-PM- <b>XXYZZ</b>                                                           |

Note : Above codes shown are for side ports.

## SOLENOID OPERATOR ➤

| <b>XX Y ZZ*</b>           |                          |                                            |
|---------------------------|--------------------------|--------------------------------------------|
| <b>XX Voltage</b>         | <b>Y Manual operator</b> | <b>ZZ Electrical connection</b>            |
| <b>11</b> 120/60, 110/50  | <b>1</b> Non-locking     | <b>JB</b> Rectangular connector            |
| <b>12</b> 240/60, 220/50  | <b>2</b> Locking         | <b>JD</b> Rectangular connector with light |
| <b>22</b> 24/60, 24/50    |                          | <b>JA</b> Square connector                 |
| <b>59</b> 24 VDC (2.5 W)  |                          | <b>JC</b> Square connector with light      |
| <b>87</b> 24 VDC (17.1 W) |                          | <b>BA</b> Flying leads (18")               |
| <b>61</b> 24 VDC (8.5 W)  |                          |                                            |

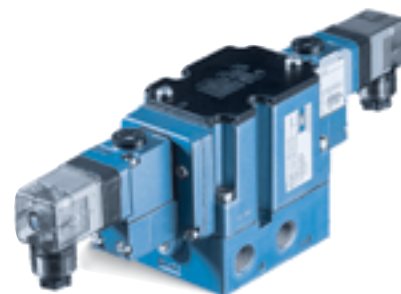
\* Other options available, see page 357.

## OPTIONS

6312D-XXX-PM-**XXYZZ**

- For piped pilot exhaust replace M by P.
- For bottom cylinder ports (excluding 1/2"), replace by 4.
- For dual pressure valves (see page 293 for use with sandwich regulators), replace by 5.

Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in the base.  
2. To order bases without the valve, choose the base from the above table, then add 6300D as a prefix. Example 6300D-131.



35

100

200

55

56

57

58

59

45

700

900

82

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

# TECHNICAL DATA

|                            |                                                                                                                                       |                    |                        |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|
| Fluid :                    | Compressed air, vacuum, inert gases                                                                                                   |                    |                        |
| Pressure range :           | Internal pilot : single operator and 3 positions : 25-150 PSI      double operator : 10-150 PSI<br>External pilot : vacuum to 150 PSI |                    |                        |
| Pilot pressure :           | Single operator and 3 positions : 25-150 PSI    Double operator : 10-150 PSI                                                          |                    |                        |
| Lubrication :              | Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)                                                |                    |                        |
| Filtration :               | 40 µ                                                                                                                                  |                    |                        |
| Temperature range :        | 0°F to 120°F (-18°C to 50°C)                                                                                                          |                    |                        |
| Flow (at 6 bar, ΔP=1bar) : | 1/4" (2.0 C <sub>v</sub> ), 3/8" : (2.6 C <sub>v</sub> ), 1/2" (3.0 C <sub>v</sub> )                                                  |                    |                        |
| Coil :                     | Epoxy encapsulated - class A wires - Continuous duty.                                                                                 |                    |                        |
| Voltage range :            | -15% to +10% of nominal voltage                                                                                                       |                    |                        |
| Protection :               | Consult factory                                                                                                                       |                    |                        |
| Power :                    | ~ Inrush : 14.8 VA      Holding : 10.9 VA<br>= 1 to 17.1 W                                                                            |                    |                        |
| Response times :           | 24 VDC (8.5 W)                                                                                                                        | Energize : 10 ms   | De-energize : 11 ms    |
|                            | 120/60                                                                                                                                | Energize : 4-13 ms | De-energize : 10-17 ms |

## Spare parts :

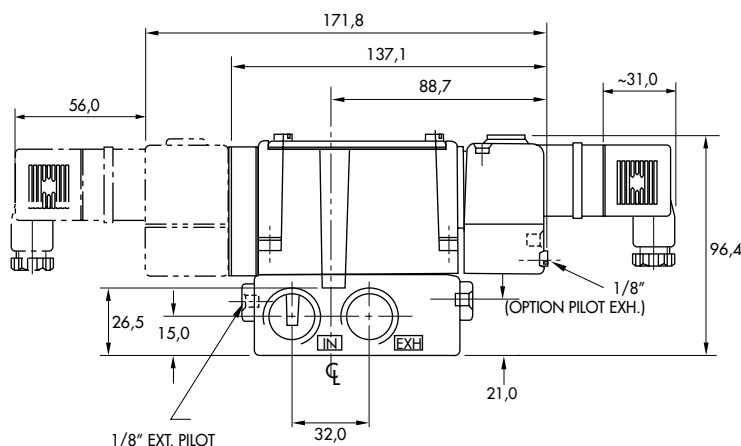
- Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
- Pilot valve : PME-XXYZZ, including seal 16337. • Pressure seal between valve and base : 16298.
- Mounting screw valve to base (x4) : 35303.

## Options :

- BSPP threads.

# DIMENSIONS

Dimensions shown are metric (mm)



| Function         | Port size                 | Flow [Max]               | Individual mounting   | Series |
|------------------|---------------------------|--------------------------|-----------------------|--------|
| <b>4/2 - 4/3</b> | <b>1/4" - 3/8" - 1/2"</b> | <b>3.0 C<sub>v</sub></b> | sub-base<br>"plug-in" |        |

## OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Short stroke with high flow.
3. High shifting forces.
4. Checked accumulator guarantees maximum pilot pressure.
5. Powerful return force thanks to the combination of mechanical and air springs.
6. Bonded spool with minimum friction, shifting in a glass-like finished bore.
7. Wiping effect eliminates sticking.
8. Pilot valve with balanced poppet, high flow, short and consistent response times.

## HOW TO ORDER

| Port size              | Pilot air | 4/2<br>Single operator      | 4/2<br>Double operator      | 4/3<br>Closed center        | 4/3<br>Open center          |
|------------------------|-----------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                        |           |                             |                             |                             |                             |
| <b>Valve less base</b> |           | 6311D-000-PM- <b>XXY</b> DA | 6321D-000-PM- <b>XXY</b> DA | 6331D-000-PM- <b>XXY</b> DA | 6341D-000-PM- <b>XXY</b> DA |
| <b>sub-base</b>        | Internal  | 6311D-111-PM- <b>XXY</b> DA | 6321D-111-PM- <b>XXY</b> DA | 6331D-111-PM- <b>XXY</b> DA | 6341D-111-PM- <b>XXY</b> DA |
| <b>1/4" NPTF</b>       | External  | 6311D-121-PM- <b>XXY</b> DA | 6321D-121-PM- <b>XXY</b> DA | 6331D-121-PM- <b>XXY</b> DA | 6341D-121-PM- <b>XXY</b> DA |
| <b>sub-base</b>        | Internal  | 6311D-211-PM- <b>XXY</b> DA | 6321D-211-PM- <b>XXY</b> DA | 6331D-211-PM- <b>XXY</b> DA | 6341D-211-PM- <b>XXY</b> DA |
| <b>3/8" NPTF</b>       | External  | 6311D-221-PM- <b>XXY</b> DA | 6321D-221-PM- <b>XXY</b> DA | 6331D-221-PM- <b>XXY</b> DA | 6341D-221-PM- <b>XXY</b> DA |
| <b>sub-base</b>        | Internal  | 6311D-311-PM- <b>XXY</b> DA | 6321D-311-PM- <b>XXY</b> DA | 6331D-311-PM- <b>XXY</b> DA | 6341D-311-PM- <b>XXY</b> DA |
| <b>1/2" NPTF</b>       | External  | 6311D-321-PM- <b>XXY</b> DA | 6321D-321-PM- <b>XXY</b> DA | 6331D-321-PM- <b>XXY</b> DA | 6341D-321-PM- <b>XXY</b> DA |

Note : Above codes shown are for side ports without lights.

## SOLENOID OPERATOR ➤

**XX Y DA\***

| XX        | Voltage         | Y        | Manual operator |
|-----------|-----------------|----------|-----------------|
| <b>11</b> | 120/60, 110/50  | <b>1</b> | Non-locking     |
| <b>12</b> | 240/60, 220/50  | <b>2</b> | Locking         |
| <b>22</b> | 24/60, 24/50    |          |                 |
| <b>59</b> | 24 VDC (2.5 W)  |          |                 |
| <b>87</b> | 24 VDC (17.1 W) |          |                 |
| <b>61</b> | 24 VDC (8.5 W)  |          |                 |

\* Other options available, see page 357.

## OPTIONS

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6311D-XXX-PM- <b>XXY</b> DA | <ul style="list-style-type: none"> <li>- For piped pilot exhaust replace M by P.</li> <li>- For bottom ports (excluding 1/2"), replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light).</li> <li>- For side ports with lights on base, replace by 2 (sgl. light), by 3 (dbl. light).</li> <li>- For lights on valve body, replace by 3.</li> <li>- For dual pressure valves with lights on valve body (see page 293 for use with sandwich regulators), replace by 6.</li> </ul> |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in the base.

2. To order bases without the valve, choose the base from the above table, then add 6300D as a prefix. Example 6300D-111.



35

100

200

55

56

57

58

59

45

700

900

82

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

# TECHNICAL DATA

|                            |                                                                                                                                       |                    |                        |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|
| Fluid :                    | Compressed air, vacuum, inert gases                                                                                                   |                    |                        |
| Pressure range :           | Internal pilot : single operator and 3 positions : 25-150 PSI      double operator : 10-150 PSI<br>External pilot : vacuum to 150 PSI |                    |                        |
| Pilot pressure :           | Single operator and 3 positions : 25-150 PSI    Double operator : 10-150 PSI                                                          |                    |                        |
| Lubrication :              | Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)                                                |                    |                        |
| Filtration :               | 40 µ                                                                                                                                  |                    |                        |
| Temperature range :        | 0°F to 120°F (-18°C to 50°C)                                                                                                          |                    |                        |
| Flow (at 6 bar, ΔP=1bar) : | 1/4" (2.0 C <sub>v</sub> ), 3/8" : (2.6 C <sub>v</sub> ), 1/2" (3.0 C <sub>v</sub> )                                                  |                    |                        |
| Coil :                     | Epoxy encapsulated - class A wires - Continuous duty.                                                                                 |                    |                        |
| Voltage range :            | -15% to +10% of nominal voltage                                                                                                       |                    |                        |
| Protection :               | Consult factory                                                                                                                       |                    |                        |
| Power :                    | ~ Inrush : 14.8 VA      Holding : 10.9 VA<br>= 1 to 17.1 W                                                                            |                    |                        |
| Response times :           | 24 VDC (8.5 W)                                                                                                                        | Energize : 10 ms   | De-energize : 11 ms    |
|                            | 120/60                                                                                                                                | Energize : 4-13 ms | De-energize : 10-17 ms |

## Spare parts :

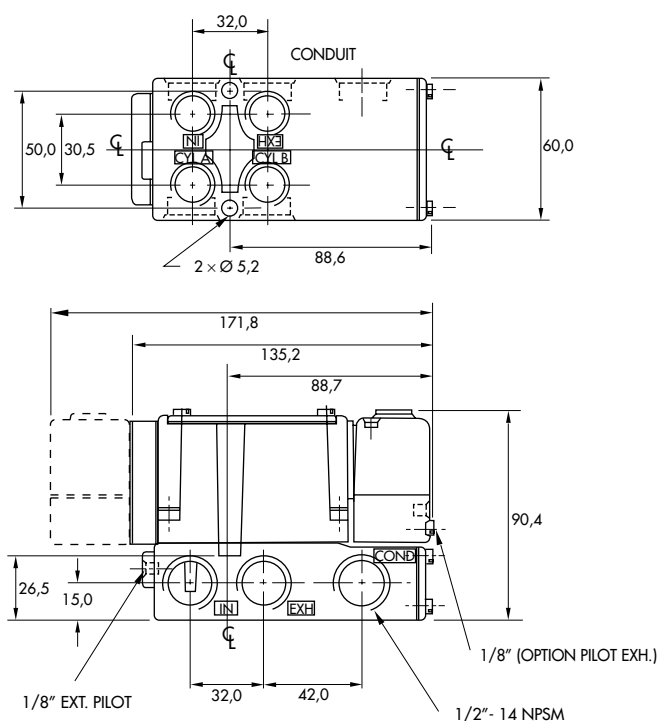
- Solenoid operator (power ≥ 4 W) : D1-XXBE, cover mounting screws 35206 and seal 16234.
- Pilot valve : PME-XXYDA-BE, including seal 16337. • Pressure seal between valve and base : 16298.
- Mounting screw valve to base (x4) : 35303.

## Options :

- BSPP threads.

# DIMENSIONS

Dimensions shown are metric (mm)

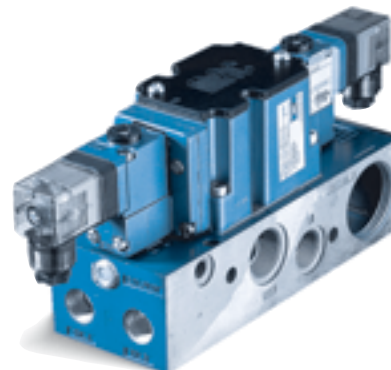


| Function         | Port size          | Flow [Max]               | Manifold mounting         | Series |
|------------------|--------------------|--------------------------|---------------------------|--------|
| <b>4/2 - 4/3</b> | <b>3/8" - 1/2"</b> | <b>3.0 C<sub>v</sub></b> | sub-base<br>non "plug-in" |        |

## OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Short stroke with high flow.
3. High shifting forces.
4. Checked accumulator guarantees maximum pilot pressure.
5. Powerful return force thanks to the combination of mechanical and air springs.
6. Bonded spool with minimum friction, shifting in a glass-like finished bore.
7. Wiping effect eliminates sticking.
8. Pilot valve with balanced poppet, high flow, short and consistent response times.

## HOW TO ORDER



| Port size              | Pilot air | 4/2<br>Single operator      | 4/2<br>Double operator      | 4/3<br>Closed center        | 4/3<br>Open center          | 4/3<br>Pressure center      |
|------------------------|-----------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                        |           |                             |                             |                             |                             |                             |
| <b>Valve less base</b> |           | 6312D-000-PM- <b>XXYYZZ</b> | 6322D-000-PM- <b>XXYYZZ</b> | 6332D-000-PM- <b>XXYYZZ</b> | 6342D-000-PM- <b>XXYYZZ</b> | 6352D-000-PM- <b>XXYYZZ</b> |
| <b>sub-base</b>        | Internal  | 6312D-531-PM- <b>XXYYZZ</b> | 6322D-531-PM- <b>XXYYZZ</b> | 6332D-531-PM- <b>XXYYZZ</b> | 6342D-531-PM- <b>XXYYZZ</b> | 6352D-531-PM- <b>XXYYZZ</b> |
| <b>3/8" NPTF</b>       | External  | 6312D-541-PM- <b>XXYYZZ</b> | 6322D-541-PM- <b>XXYYZZ</b> | 6332D-541-PM- <b>XXYYZZ</b> | 6342D-541-PM- <b>XXYYZZ</b> | 6352D-541-PM- <b>XXYYZZ</b> |
| <b>sub-base</b>        | Internal  | 6312D-631-PM- <b>XXYYZZ</b> | 6322D-631-PM- <b>XXYYZZ</b> | 6332D-631-PM- <b>XXYYZZ</b> | 6342D-631-PM- <b>XXYYZZ</b> | 6352D-631-PM- <b>XXYYZZ</b> |
| <b>1/2" NPTF</b>       | External  | 6312D-641-PM- <b>XXYYZZ</b> | 6322D-641-PM- <b>XXYYZZ</b> | 6332D-641-PM- <b>XXYYZZ</b> | 6342D-641-PM- <b>XXYYZZ</b> | 6352D-641-PM- <b>XXYYZZ</b> |

Note : Above codes shown are for side cylinder ports.

## SOLENOID OPERATOR ➤

**XX Y ZZ\***

| XX Voltage                | Y Manual operator    | ZZ Electrical connection                   |
|---------------------------|----------------------|--------------------------------------------|
| <b>11</b> 120/60, 110/50  | <b>1</b> Non-locking | <b>JB</b> Rectangular connector            |
| <b>12</b> 240/60, 220/50  | <b>2</b> Locking     | <b>JD</b> Rectangular connector with light |
| <b>22</b> 24/60, 24/50    |                      | <b>JA</b> Square connector                 |
| <b>59</b> 24 VDC (2.5 W)  |                      | <b>JC</b> Square connector with light      |
| <b>87</b> 24 VDC (17.1 W) |                      | <b>BA</b> Flying leads (18")               |
| <b>61</b> 24 VDC (8.5 W)  |                      |                                            |

\* Other options available, see page 357.

## OPTIONS

6312D-XXX-PM-**XXYYZZ**

- For piped pilot exhaust replace M by P.
- For bottom cylinder ports, replace by 4.
- For bottom and side cylinder ports, replace by 7.
- For dual pressure valves (see page 293 for use with sandwich regulators), replace by 5.

**MODIFICATIONS - MOD 0210** Bottom inlet port in addition to side inlet port - **TO ORDER** : 6312D-531-PM-111JA **MOD 0210**

- Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in the manifold.  
 2. To order manifolds without the valve, choose the manifold from the above table, then add 6300D as a prefix. Example 6300D-631.  
 3. When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for all the valves in the manifold whether single or double solenoid.  
 4. Manifolds for solenoid and remote air operated valves must be ganged separately.

35

100

200

55

56

57

58

59

45

700

900

82

**6300**

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

# **TECHNICAL DATA**

|                                   |                                                                                                                                       |                    |                        |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|
| <b>Fluid :</b>                    | Compressed air, vacuum, inert gases                                                                                                   |                    |                        |
| <b>Pressure range :</b>           | Internal pilot : single operator and 3 positions : 25-150 PSI      double operator : 10-150 PSI<br>External pilot : vacuum to 150 PSI |                    |                        |
| <b>Pilot pressure :</b>           | Single operator and 3 positions : 25-150 PSI    Double operator : 10-150 PSI                                                          |                    |                        |
| <b>Lubrication :</b>              | Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)                                                |                    |                        |
| <b>Filtration :</b>               | 40 µ                                                                                                                                  |                    |                        |
| <b>Temperature range :</b>        | 0°F to 120°F (-18°C to 50°C)                                                                                                          |                    |                        |
| <b>Flow (at 6 bar, ΔP=1bar) :</b> | 3/8" : (2.6 C <sub>v</sub> ), 1/2" (3.0 C <sub>v</sub> )                                                                              |                    |                        |
| <b>Coil :</b>                     | Epoxy encapsulated - class A wires - Continuous duty.                                                                                 |                    |                        |
| <b>Voltage range :</b>            | -15% to +10% of nominal voltage                                                                                                       |                    |                        |
| <b>Protection :</b>               | Consult factory                                                                                                                       |                    |                        |
| <b>Power :</b>                    | ~ Inrush : 14.8 VA      Holding : 10.9 VA<br>= 1 to 17.1 W                                                                            |                    |                        |
| <b>Response times :</b>           | 24 VDC (8.5 W)                                                                                                                        | Energize : 10 ms   | De-energize : 11 ms    |
|                                   | 120/60                                                                                                                                | Energize : 4-13 ms | De-energize : 10-17 ms |

## Spare parts :

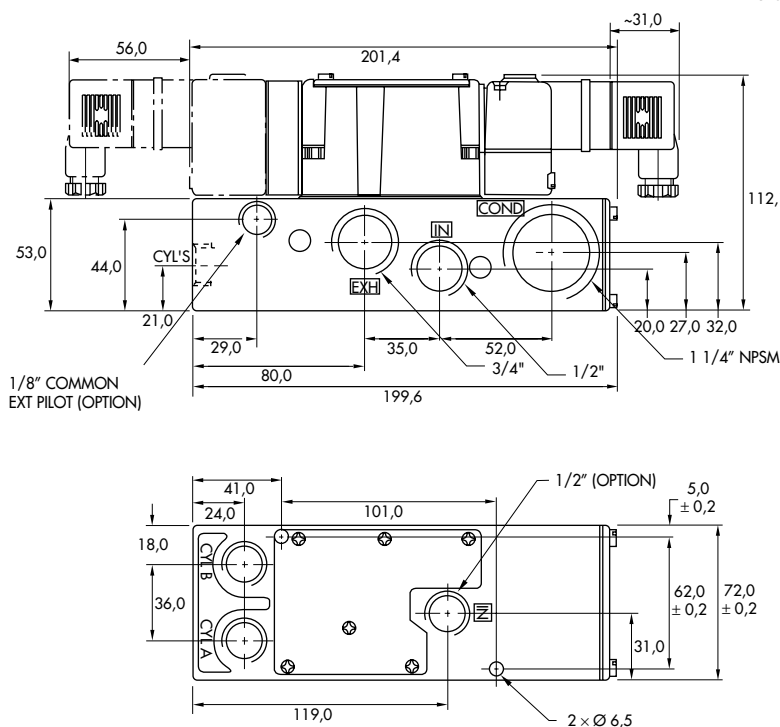
- Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
- Pilot valve : PME-XYZZ, including seal 16337. • Pressure seal between valve and base : 16396.
- Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01
- Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014.

## Options :

- BSPP threads.

# **DIMENSIONS**

Dimensions shown are metric (mm)



| Function         | Port size          | Flow [Max]               | Manifold mounting     | Series |
|------------------|--------------------|--------------------------|-----------------------|--------|
| <b>4/2 - 4/3</b> | <b>3/8" - 1/2"</b> | <b>3.0 C<sub>v</sub></b> | sub-base<br>"plug-in" |        |

## OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Short stroke with high flow.
3. High shifting forces.
4. Checked accumulator guarantees maximum pilot pressure.
5. Powerful return force thanks to the combination of mechanical and air springs.
6. Bonded spool with minimum friction, shifting in a glass-like finished bore.
7. Wiping effect eliminates sticking.
8. Pilot valve with balanced poppet, high flow, short and consistent response times.

## HOW TO ORDER

| Port size              | Pilot air | 4/2<br>Single operator      | 4/2<br>Double operator      | 4/3<br>Closed center        | 4/3<br>Open center          | 4/3<br>Pressure center      |
|------------------------|-----------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                        |           |                             |                             |                             |                             |                             |
| <b>Valve less base</b> |           | 6311D-000-PM- <b>XXY</b> DA | 6321D-000-PM- <b>XXY</b> DA | 6331D-000-PM- <b>XXY</b> DA | 6341D-000-PM- <b>XXY</b> DA | 6351D-000-PM- <b>XXY</b> DA |
| <b>sub-base</b>        | Internal  | 6311D-511-PM- <b>XXY</b> DA | 6321D-511-PM- <b>XXY</b> DA | 6331D-511-PM- <b>XXY</b> DA | 6341D-511-PM- <b>XXY</b> DA | 6351D-511-PM- <b>XXY</b> DA |
| <b>3/8" NPTF</b>       | External  | 6311D-521-PM- <b>XXY</b> DA | 6321D-521-PM- <b>XXY</b> DA | 6331D-521-PM- <b>XXY</b> DA | 6341D-521-PM- <b>XXY</b> DA | 6351D-521-PM- <b>XXY</b> DA |
| <b>sub-base</b>        | Internal  | 6311D-611-PM- <b>XXY</b> DA | 6321D-611-PM- <b>XXY</b> DA | 6331D-611-PM- <b>XXY</b> DA | 6341D-611-PM- <b>XXY</b> DA | 6351D-611-PM- <b>XXY</b> DA |
| <b>1/2" NPTF</b>       | External  | 6311D-621-PM- <b>XXY</b> DA | 6321D-621-PM- <b>XXY</b> DA | 6331D-621-PM- <b>XXY</b> DA | 6341D-621-PM- <b>XXY</b> DA | 6351D-621-PM- <b>XXY</b> DA |

Note : Above codes shown are for side cylinder ports without lights.

## SOLENOID OPERATOR ➤

**XX Y DA**

| <b>XX Voltage</b>         | <b>Y Manual operator</b> |
|---------------------------|--------------------------|
| <b>11</b> 120/60, 110/50  | <b>1</b> Non-locking     |
| <b>12</b> 240/60, 220/50  | <b>2</b> Locking         |
| <b>22</b> 24/60, 24/50    |                          |
| <b>59</b> 24 VDC (2.5 W)  |                          |
| <b>87</b> 24 VDC (17.1 W) |                          |
| <b>61</b> 24 VDC (8.5 W)  |                          |

\* Other options available, see page 357.

## OPTIONS

6311D-XXX-PM-**XXY**DA

- For piped pilot exhaust replace M by P.
- For bottom cylinder ports, replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light).
- For side cylinder ports with light, replace by 2 (sgl. light), by 3 (dbl. light).
- For bottom and side cylinder ports, replace by 7 (no light), by 8 (sgl. light), by 9 (dbl. light).
- For lights on valve body, replace by 3.
- For dual pressure valves with lights on valve body (see page 293 for use with sandwich regulators), replace by 6.

**MODIFICATIONS - MOD 0210** Bottom inlet port in addition to side inlet port - **TO ORDER** : 6311D-511-PM-111DA **MOD 0210**

- Note :
1. The valve less base is always the same for internal or external pilot. These options are effected in the manifold.
  2. To order manifolds without the valve, choose the manifold from the above table, then add 6300D as a prefix. Example 6300D-511.
  3. When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for all the valves in the manifold whether single or double solenoid.
  4. Manifolds for solenoid and remote air operated valves must be ganged separately.

35

100

200

55

56

57

58

59

45

700

900

82

**6300**

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

# TECHNICAL DATA

|                            |                                                                                                                                       |                    |                        |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|
| Fluid :                    | Compressed air, vacuum, inert gases                                                                                                   |                    |                        |
| Pressure range :           | Internal pilot : single operator and 3 positions : 25-150 PSI      double operator : 10-150 PSI<br>External pilot : vacuum to 150 PSI |                    |                        |
| Pilot pressure :           | Single operator and 3 positions : 25-150 PSI    Double operator : 10-150 PSI                                                          |                    |                        |
| Lubrication :              | Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)                                                |                    |                        |
| Filtration :               | 40 µ                                                                                                                                  |                    |                        |
| Temperature range :        | 0°F to 120°F (-18°C to 50°C)                                                                                                          |                    |                        |
| Flow (at 6 bar, ΔP=1bar) : | 3/8" : (2.6 C <sub>v</sub> ), 1/2" (3.0 C <sub>v</sub> )                                                                              |                    |                        |
| Coil :                     | Epoxy encapsulated - class A wires - Continuous duty.                                                                                 |                    |                        |
| Voltage range :            | -15% to +10% of nominal voltage                                                                                                       |                    |                        |
| Protection :               | Consult factory                                                                                                                       |                    |                        |
| Power :                    | ~ Inrush : 14.8 VA      Holding : 10.9 VA<br>= 1 to 17.1 W                                                                            |                    |                        |
| Response times :           | 24 VDC (8.5 W)                                                                                                                        | Energize : 10 ms   | De-energize : 11 ms    |
|                            | 120/60                                                                                                                                | Energize : 4-13 ms | De-energize : 10-17 ms |

## Spare parts :

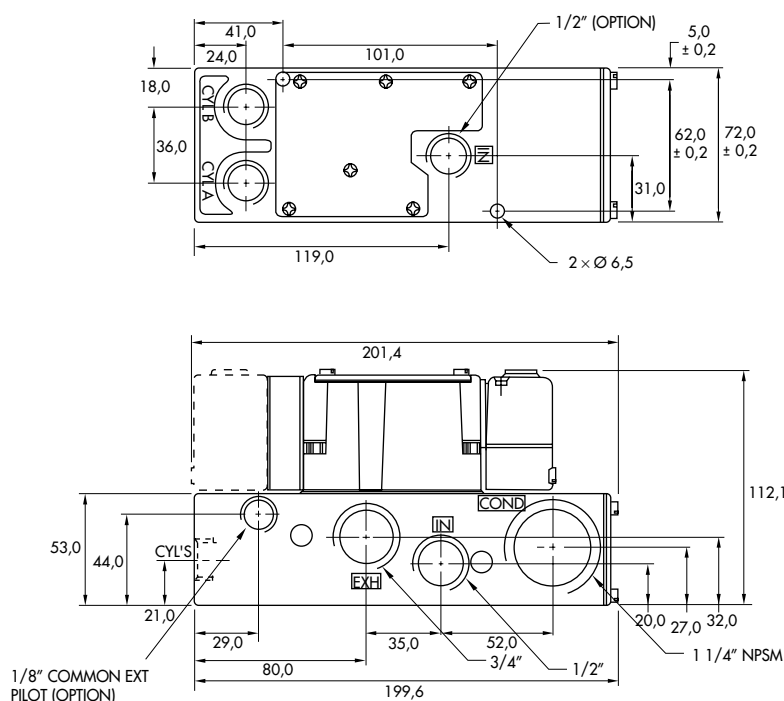
- Solenoid operator (power ≥ 4 W) : D1-XXBE, cover mounting screws 35206 and seal 16234.
- Pilot valve : PME-XXYDA-BE, including seal 16337. • Pressure seal between valve and base : 16396.
- Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01
- Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014.

## Options :

- BSPP threads.

# DIMENSIONS

Dimensions shown are metric (mm)



## Codification table for voltages / Manual operator / Electrical connection / Wire length

VALVE CODE ► **-  $\frac{XX}{1} \frac{Y}{2} \frac{ZZ}{3} \frac{(-VV)}{4}$**

| OPTIONS AVAILABLE FOR                                                                                                                                                                                                                                           | OPTIONS AVAILABLE FOR                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>- valves type 100 Series</li> <li>- pilot valves "CNOMO"</li> </ul>                                                                                                                                                      | <ul style="list-style-type: none"> <li>- valves type 200 Series</li> </ul>                                                                  |
| <ul style="list-style-type: none"> <li>- Pilot operated valves with pilots type 100 Series</li> <li>Series : 55 - 56 - 700 - 800 - 900</li> <li>- 6300 - 6500 - 6600 - 1300</li> <li>- ISO 1 - ISO 2 - ISO 3.</li> <li>- MAC 125 - MAC 250 - MAC 500</li> </ul> | <ul style="list-style-type: none"> <li>- pilot operated valves with pilots type 200 Series</li> <li>Series : 200 - 57 - 58 - 59.</li> </ul> |
| <ul style="list-style-type: none"> <li>- Pilot operated valves with pilots "CNOMO"</li> <li>Series : ISO1 - ISO2 - ISO3</li> </ul>                                                                                                                              |                                                                                                                                             |

Used on valve series: 100, 55, 56, 700, 800, 900, 6300, 6500, 6600, 1300, MVA1C, MVA2B, MVA3B, MAC125, MAC250, MAC500.

Used on valve series: 200, 57, 58, 59.

### 1. VOLTAGE (100 Serie type coil)

| - XX Y ZZ | VOLTAGE                           |
|-----------|-----------------------------------|
| 11        | 120/60, 110/50                    |
| 12        | 240/60, 220/50                    |
| 13        | 100/60, 100/50                    |
| 15        | 200/60, 200 /50                   |
| 16        | 10/60                             |
| 20        | 6/60                              |
| 21        | 12/50, 12/60                      |
| 22        | 24/60, 24/50                      |
| 23        | 32/60, 32/50                      |
| 24        | 48/60, 42/50                      |
| 26*       | 380/50, 440/50, 440/60, 480/60    |
| 29        | 220/60                            |
| 34        | 127/50, 120/50                    |
| 35        | 48/50                             |
| 36        | 16/60                             |
| 81        | 24/50                             |
| 50        | 24 VDC (6 W)                      |
| 51        | 24 VDC (4 W)                      |
| 54        | 12 VDC (4 W)                      |
| 55        | 12 VDC (6 W)                      |
| 57        | 12 VDC (2.5 W)                    |
| 59        | 24 VDC (2.5 W)                    |
| 60        | 12 VDC (8.5 W)                    |
| 61        | 24 VDC (8.5 W)                    |
| 64        | 6 VDC (6 W)                       |
| 65        | 32 VDC (7 W)                      |
| 66        | 48 VDC (5.8 W)                    |
| 67        | 64 VDC (7.5 W)                    |
| 68        | 120 VDC (6.4 W)                   |
| 69*       | 220 VDC (8.7 W), 250 VDC (11.2 W) |
| 75        | 90 VDC (8.8 W)                    |
| 76*       | 100 VDC (6.9 W)                   |
| 84*       | 125 VDC (10.9 W)                  |
| 87*       | 24 VDC (17.1 W)                   |
| 88*       | 12 VDC (17.4 W)                   |
| 89*       | 36 VDC (18.8 W)                   |
| 90        | 28 VDC (8.2 W)                    |
| 91*       | 6 VDC (10.6 W)                    |
| 92        | 190 VDC (6.5 W)                   |
| 94        | 3 VDC (7 W)                       |
| 95        | 38 VDC (6.4 W)                    |
| A1        | 24 VDC (1 W)                      |
| A2        | 12 VDC (1 W)                      |
| A3        | 9 VDC (1 W)                       |

MOD. DD01 : Protection diode (DC) - MAX. 8.5W

MOD. MOV1 : Protection varistor (AC) - MAX. 8.5W

\* Voltages are CLSF only

### 1. VOLTAGE (200 Serie type coil)

| - XX Y ZZ | VOLTAGE                          |
|-----------|----------------------------------|
| 11        | 120/60, 110/50, 24 VDC (6 W)     |
| 12        | 240/60, 220/50                   |
| 13        | 100/60, 100/50                   |
| 14        | 200/60, 200/50                   |
| 20        | 6/60                             |
| 21        | 12/60                            |
| 22        | 24/60, 24/50                     |
| 23        | 32/60, 32/50                     |
| 24        | 48/60, 42/50                     |
| 25        | 240/50                           |
| 26        | 480/60, 440/50                   |
| 27        | 127/60                           |
| 28        | 415/50                           |
| 29        | 220/60                           |
| 30        | 380/50                           |
| 31        | 550/60, 550/50                   |
| 32        | 120/60, 110/50                   |
| 33        | 600/60                           |
| 34        | 127/50                           |
| 35        | 48/50                            |
| 50        | 24 VDC (6 W)                     |
| 51        | 24 VDC (4.5 W)                   |
| 52        | 24 VDC (2.5 W)                   |
| 53        | 24 VDC (1.0 W)                   |
| 55        | 12 VDC (6 W)                     |
| 57        | 12 VDC (2.5 W)                   |
| 58        | 48 VDC (2.5 W)                   |
| 60        | 12 VDC (9.5 W)                   |
| 61        | 24 VDC (8.5 W)                   |
| 64        | 6 VDC (8.5 W)                    |
| 65        | 32 VDC (10 W)                    |
| 66        | 48 VDC (11.5 W)                  |
| 67        | 64 VDC (10.5 W)                  |
| 68        | 120 VDC (12.3 W)                 |
| 69        | 250 VDC (9.2 W)                  |
| 71        | 8 VDC (8.2 W)                    |
| 72        | 24 VDC (12 W)                    |
| 73        | 198 VDC (10 W)                   |
| 74        | 72 VDC (11.3 W)                  |
| 75        | 90 VDC (11.3 W)                  |
| 76        | 100 VDC (9 W)                    |
| 77        | 220 VDC (10 W), 230 VDC (11.6 W) |
| 78*       | 24 VDC (24 W)                    |
| 80        | 55 VDC (10.6 W)                  |
| 82        | 170 VDC (11.1 W)                 |
| 83        | 15 VDC (8.1 W)                   |
| 84        | 125 VDC (10 W)                   |
| 86        | 36 VDC (11 W)                    |
| 93*       | 12 VDC (24 W)                    |

## 2. MANUAL OPERATOR (Common options for 100 & 200 Series type coils)

| - XX Y ZZ | MANUAL OPERATOR      |    |                                 |
|-----------|----------------------|----|---------------------------------|
| 0         | No operator          | 5* | No Operator with Light          |
| 1         | Non-locking recessed | 6* | Non-Locking Recessed with Light |
| 2         | Locking recessed     | 7* | Locking Recessed with Light     |
| 3         | Non-locking extended | 8* | Non-Locking Extended with Light |
| 4         | Locking extended     | 9* | Locking Extended with Light     |

\* Lights used with "AA" electrical connection

### 3. ELECTRICAL CONNECTION (100 Serie type coil)

| - XX Y ZZ | ELECTRICAL CONNECTION                                         |
|-----------|---------------------------------------------------------------|
| AA        | Wiring box with 1/2" NPS conduit                              |
| BA        | Flying leads                                                  |
| CA        | 1/2" NPS conduit                                              |
| CC        | 1/2" NPT conduit                                              |
| FA        | Military type 2 PIN                                           |
| GA        | Military type 3 PIN                                           |
| HA        | AA with ground wire                                           |
| JA*       | Square connector                                              |
| JB        | Rectangular connector                                         |
| JC*       | Square connector with light                                   |
| JD        | Rectangular connector with light                              |
| JE        | Square connector on top<br>(ISO2, ISO3)                       |
| JF        | Rectangular connector on top<br>(ISO1, ISO2, ISO3)            |
| JG        | JE with light                                                 |
| JH        | JF with light                                                 |
| JJ        | Square connector, male only                                   |
| JM        | Rectangular connector, male only                              |
| MA        | Electrical common conduit<br>(100 Series-Manifold/900 Series) |
| MB        | Electrical common conduit<br>(100 Series-Stacking/700 Series) |
| NA        | CA with ground wire                                           |
| NC        | CC with ground wire                                           |
| RA        | 3/8" NPS conduit                                              |

\* Not to be used with 100, 800 and 900 Series manifold mounting

### 3. ELECTRICAL CONNECTION (200 Serie type coil)

| - XX Y ZZ | ELECTRICAL CONNECTION                |
|-----------|--------------------------------------|
| AA        | Wiring box with 1/2" NPS conduit     |
| BA        | Flying leads                         |
| CA        | 1/2" NPS conduit                     |
| CC        | 1/2" NPT conduit                     |
| EA        | Explosion proof (200 Series)         |
| EA        | Explosion proof (57, 58 & 59 Series) |
| FA        | Military type 2 PIN                  |
| GA        | Military type 3 PIN                  |
| HA        | AA with ground wire                  |
| JA*       | Square connector                     |
| JC        | Square connector with light          |
| JJ        | Square connector, male only          |
| NA        | CA with ground wire                  |
| NC        | CC with ground wire                  |

#### 4. COIL WIRE LENGTH (Common options for 100 & 200 Serie type coils)

| - XX Y ZZ (-VV)                          | WIRE LENGTH |
|------------------------------------------|-------------|
| AA                                       | 18"         |
| AB                                       | 24"         |
| AD                                       | 36"         |
| AE                                       | 48"         |
| AF                                       | 72"         |
| AG                                       | 6"          |
| AR                                       | 12"         |
| AU                                       | 120"        |
| BA                                       | 60"         |
| BB                                       | 144"        |
| Series 6000 : wire length, from the base |             |
| MOD L024                                 | 24"         |
| MOD L036                                 | 36"         |
| MOD L048                                 | 48"         |
| MOD L060                                 | 60"         |
| MOD L072                                 | 72"         |
| MOD L120                                 | 120"        |

Алматы (7273)495-231  
 Ангарск (3955)60-70-56  
 Архангельск (8182)63-90-72  
 Астрахань (8512)99-46-04  
 Барнаул (3852)73-04-60  
 Белгород (4722)40-23-64  
 Благовещенск (4162)22-76-07  
 Брянск (4832)59-03-52  
 Владивосток (423)249-28-31  
 Владикавказ (8672)28-90-48  
 Владимир (4922)49-43-18  
 Волгоград (844)278-03-48  
 Вологда (8172)26-41-59  
 Воронеж (473)204-51-73  
 Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
 Ижевск (3412)26-03-58  
 Иркутск (395)279-98-46  
 Казань (843)206-01-48  
 Калининград (4012)72-03-81  
 Калуга (4842)92-23-67  
 Кемерово (3842)65-04-62  
 Киров (8332)68-02-04  
 Коломна (4966)23-41-49  
 Кострома (4942)77-07-48  
 Краснодар (861)203-40-90  
 Красноярск (391)204-63-61  
 Курск (4712)77-13-04  
 Курган (3522)50-90-47  
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
 Москва (495)268-04-70  
 Мурманск (8152)59-64-93  
 Набережные Челны (8552)20-53-41  
 Нижний Новгород (831)429-08-12  
 Новокузнецк (3843)20-46-81  
 Ноябрьск (3496)41-32-12  
 Новосибирск (383)227-86-73  
 Омск (3812)21-46-40  
 Орел (4862)44-53-42  
 Оренбург (3532)37-68-04  
 Пенза (8412)22-31-16  
 Петрозаводск (8142)55-98-37  
 Псков (8112)59-10-37  
 Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
 Рязань (4912)46-61-64  
 Самара (846)206-03-16  
 Санкт-Петербург (812)309-46-40  
 Саратов (845)249-38-78  
 Севастополь (8692)22-31-93  
 Саранск (8342)22-96-24  
 Симферополь (3652)67-13-56  
 Смоленск (4812)29-41-54  
 Сочи (862)225-72-31  
 Ставрополь (8652)20-65-13  
 Сургут (3462)77-98-35  
 Сыктывкар (8212)25-95-17  
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